

## Integrated Spatial Filter Array, Phase I

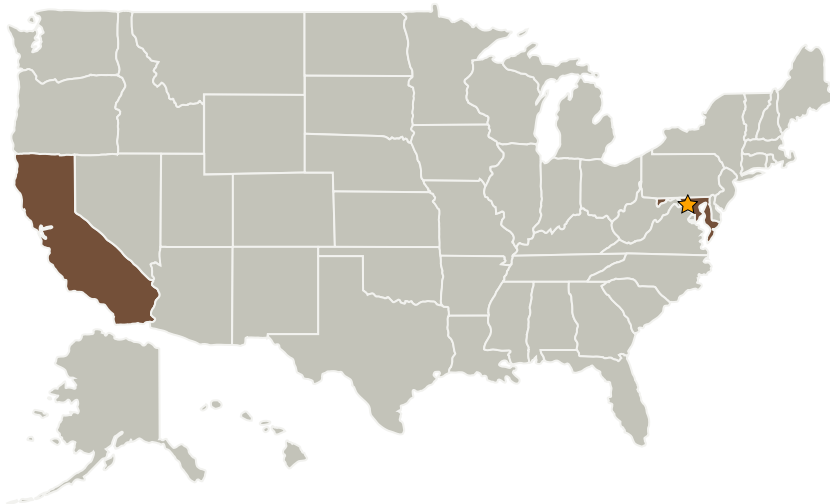
Completed Technology Project (2009 - 2009)



## Project Introduction

To address the NASA Earth Science Division need for spatial filter arrays for amplitude and wavefront control, Luminit proposes to develop a novel polarization-preserving Integrated Spatial Filter Array (iSFA) comprising 36 x 36 waveguides and two microlens arrays in a hexagonal configuration. Each waveguide acts as a polarization maintaining single-mode fiber and is precisely mapped to a pair of input/output lenslets. The 36 x 36 waveguides have identical fast and slow polarization axes and can be mass-fabricated to reduce cost and enhance placement accuracy, uniformity, throughput and reliability. The iSFA will be hermetically packaged in a 1 cubic inch box to withstand high radiation and temperature extremes in space. In Phase I, we will demonstrate the feasibility of iSFA, which will reduce the development risk of a Phase II 36 x 36 prototype iSFA. The demonstrated results will offer NASA enhanced nulling coronagraph imaging for detection of planets beyond our solar system with the Terrestrial Planet Finder.

## Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Goddard Space Flight Center(GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland
Luminit, LLC	Supporting Organization	Industry	Torrance, California



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## Organizational Responsibility

**Responsible Mission Directorate:**

Space Technology Mission Directorate (STMD)

**Lead Center / Facility:**

Goddard Space Flight Center (GSFC)

**Responsible Program:**

Small Business Innovation Research/Small Business Tech Transfer

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## Primary U.S. Work Locations

California

Maryland

## Project Management

### Program Director:

Jason L Kessler

### Program Manager:

Carlos Torrez

## Technology Areas

### Primary:

- TX08 Sensors and Instruments
  - └ TX08.1 Remote Sensing Instruments/Sensors
    - └ TX08.1.1 Detectors and Focal Planes